Electronic Version
Stylesheet Version v1.1.1

Claims

[c1] 1. A method of synthesizing layout patterns, comprising the steps of:

embodying Walsh patterns in a set of Walsh pattern matrices;

processing at least one from the set of Walsh pattern matrices to form a set of test matrices; and

mapping the set of test matrices to a test pattern set.

[c2] 2. The method of claim 1, wherein the set of Walsh pattern matrices are generated using an Nth order Hadamard matrix, wherein N dictates the size of each matrix.

[c3] 3. The method of claim 1, wherein the processing step utilizes a Boolean operation.

[c4] 4. The method of claim 3, wherein the Boolean operation utilizes at least one logical operation selected from the group consisting of: a logical or, logical nor, logical and, and logical nand.

[c5] 5. The method of claim 1, wherein the combining step determines a set of combinatorial indices for n choose k matrices, wherein n represents the number of matrices in

the set of Walsh pattern matrices, and k is the number of matrices in a group of processed matrices.

[c6] 6. The method of claim 5, wherein k is selected as large as possible given a set of computational constraints.

[c7] 7. The method of claim 1, wherein the mapping step maps matrix entries to tiles in a minimum space, minimum width grid, wherein each tile is assigned a value of either level on or level off.

[c8] 8. The method of claim 7, wherein the mapping step adjusts spacing of tiles when a transition from on to off, or off to on is detected.

[c9] 9. The method of claim 1, comprising the further step of pruning the pattern set based on a predetermined set of rules.

[c10] 10. A system for generating a set of test patterns to test an optical proximity correction algorithm, comprising:

a system that generates a set of Walsh pattern matrices;

a system that processes groups of matrices from the set of Walsh pattern matrices to form a set of test matrices; and

a system that maps the set of test matrices to a test pattern set.

[c11] 11. The system of claim 10, wherein the processing system determines a set of combinatorial indices for n choose k matrices, wherein n represents the number of matrices in the set of Walsh pattern matrices, and k is the number of matrices in each group of matrices.

[c12] 12. The system of claim 10, wherein the mapping system maps matrix entries to tiles in a minimum space, minimum width grid, wherein each tile is assigned a value of either level on or level off.

[c13] 13. The method of claim 12, wherein the mapping system adjusts spacing of tiles when a transition from on to off, or off to on, is detected.

[c14] 14. The method of claim 10, further comprising a system for pruning the pattern set based on a predetermined set of rules.

[c15] 15. A program product stored on a recordable medium for generating a set of test patterns to test an optical proximity correction algorithm, the program product comprising:

means for generating a set of Walsh pattern matrices;

means for processing groups of matrices from the set of Walsh pattern matrices to form a set of test matrices;

means for mapping the set of test matrices to a test pattern set.

[c16] 16. The program product of claim 15, wherein the combining means determines a set of combinatorial indices for n choose k matrices, wherein n represents the number of matrices in the set of Walsh pattern matrices, and k is the number of matrices in each group of matrices.

[c17] 17. The program product of claim 15, wherein the processing means processes matrices using a Boolean operation.

[c18] 18. The program product of claim 15, wherein the mapping means maps matrix entries to tiles in a minimum space, minimum width grid, wherein each tile is assigned a value of either level on or level off.

[c19] 19. The program product of claim 18, wherein the mapping means adjusts spacing of tiles when a transition from on to off, or off to on, is detected.

[c20] 20. The program product of claim 15, further comprising means for pruning the pattern set based on a predetermined set of rules.